

# Certificate

## Certified Passive House Component

for arctic climate, valid until 31.12.2016

Passive House Institute  
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Category: **Attic staircase**  
Manufacturer: **WIPPRO Wipplinger Ges.m.b.H & Co.KG**  
**4191 Vorderweissenbach, AUSTRIA**  
Product name: **KLIMATEC 160**

**This certificate was awarded based on the following criteria:**

A given component size of 1.40 m by 0.70 m results in:

$$U_D = 0.34 \text{ W/(m}^2\text{K)} \leq 0.60 \text{ W/(m}^2\text{K)}$$

Taking the installation situations into account, the component meets the following criterion.

$$U_{D,installed} \leq 0.60 \text{ W/(m}^2\text{K)}$$

Functional requirements of hygiene:

$$f_{Rsi} = 0,25 \text{ m}^2\text{K/W} \geq 0.80$$

Following thermal bridge coefficients  $\Psi$  [W/(mK)] have been determined:

	Wooden- beam ceiling	Concrete-ceiling	Concrete-ceiling with frame
<b>Thermal bridge coefficient <math>\Psi</math> [W/(mK)]</b>	0.04	0.08	0.05
<b><math>U_{D,installed}</math> [W/(m<sup>2</sup>K)]</b>	0.52	0.70	0.57

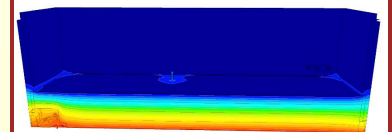
### Description

Attic stairs of wooden composite material. Trap door with insulation of extruded polystyrene ( $\lambda = 0.035 \text{ W/(mk)}$ ) and coating of sheet metal. 3 - level airtightness-sealing (EPDM, TPE) and surrounding insulation of mineral wool ( $\lambda = 0.035 \text{ W/(mk)}$ ). Installation in arctic climates requires installation frame for concrete-ceilings.

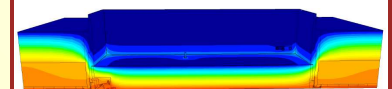
Please ask the manufacturer for a detailed report containing all calculations and results.



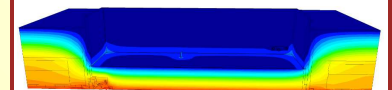
Representation of the Passive House Attic Stairs



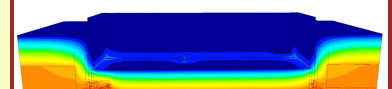
Isothermal map of the Passive House Attic Stairs



Isothermal map installation in concrete ceiling



Isothermal map installation in wooden-beam ceiling



Isothermal map installation in concrete ceiling with installation frame

arctic climate



**CERTIFIED COMPONENT**

Passive House Institute